

1. A fire suppression sprinkler system for protecting a room having a hollow wall, said system comprising:

(a) a manifold operatively connected to a source of fire suppression fluid, said manifold having an outlet;

5 (b) a sprinkler head mounted on said hollow wall;

(c) a flexible conduit operatively connecting said sprinkler head to said manifold outlet, said conduit running through an unobstructed path from said manifold to said sprinkler head, a portion of said path being within said hollow wall.

10 2. The fire suppression sprinkler system of claim 1 wherein said conduit is not visible from within said room.

3. The fire suppression sprinkler system of claim 1 wherein said conduit is removably connected to said sprinkler head.

15 4. The fire suppression sprinkler system of claim 1 wherein said sprinkler head is removably mounted to said hollow wall.

5. The fire suppression sprinkler system of claim 1 wherein substantially the 20 entire length of said conduit is flexible.

6. The fire suppression sprinkler system of claim 1 wherein said conduit is kink resistant.

25 7. The fire suppression sprinkler system of claim 6 wherein said conduit has a minimum bend radius of between approximately one inch and approximately twelve inches.

8. The fire-suppression sprinkler system of claim 1 further comprising a 30 mount including:

a housing defining an internal volume within which the sprinkler head is received, the housing having an aperture through which the flexible conduit extends to operatively connect to the sprinkler head and an open face; and

5 a cover which covers the open face of the housing, the cover having an opening within which the sprinkler head extends.

9. The fire-suppression sprinkler system of claim 8 wherein the mount further comprises an elbow joint connected between the sprinkler head and flexible conduit, the elbow joint attached to the housing.

10

10. The fire-suppression sprinkler system of claim 8 wherein the housing is configured to be positioned within a recess in a wall, such that the cover is substantially flush with the wall.

15

11. The fire-suppression sprinkler system of claim 1 wherein the flexible conduit is formed of a heat-resistant material.

12. The fire-suppression sprinkler system of claim 11 wherein the flexible conduit is formed of a smoke-resistant material.

20

13. The fire-suppression sprinkler system of claim 1 wherein the manifold includes a flow detector configured to trigger an audible alarm in response to the flow of fire-suppression fluid through the flow detector.

25

14. The fire-suppression sprinkler system of claim 1 wherein the manifold includes a check valve which prevents the back flow of fire-suppression fluid from the sprinkler system to a source of the fire-suppression fluid.

30

15. A method for installing a fire suppression sprinkler system in a building under construction and having a room to be protected, said room having a hollow wall when construction is complete, said method comprising the steps of:

- (a) operatively connecting a manifold to a supply of fire suppression fluid at a manifold location, said manifold having an outlet;
- (b) mounting a sprinkler head at a sprinkler head location on said hollow wall;
- 5 (c) providing a path between said manifold location and said sprinkler head location that is not visible from said room after construction is complete;
- (d) running a flexible conduit along said path;
- (e) operatively connecting an end of said conduit to said manifold outlet; and
- (f) operatively connecting another end of said conduit to said sprinkler head.

10

16. The method of claim 15 wherein said sprinkler head is removably mounted to said hollow wall.

15

17. The method of claim 15 wherein said conduit is removably connected to said sprinkler head.

18. The method of claim 15 wherein substantially the entire length of said conduit is flexible.

20

19. The method of claim 15 wherein said conduit is kink resistant.

20. The method of claim 15 wherein mounting the sprinkler head further includes:

25 providing a housing defining an internal volume and having an open face and an aperture;

positioning an end of the flexible conduit through the aperture in the housing; attaching the sprinkler head to the end of the flexible conduit and placing the sprinkler head within the internal volume of the housing;

30

providing a cover having an opening over the open face of the housing, the sprinkler head extending through the opening.

21. The method of claim 20 further comprising:
connecting elbow joint between the sprinkler head and flexible conduit; and
attaching the elbow joint to the housing.

5 22. The method of claim 20 further comprising: providing a recess within the
hollow wall; and positioning the housing within the recess such that the cover is
substantially flush with the wall.

10 23. The method of claim 15 further comprising forming the flexible conduit
from a heat-resistant material.

24. The method of claim 15 further comprising forming the flexible conduit
from a smoke-resistant material.

15 25. The method of claim 15 further comprising providing within the manifold
a flow detector configured to trigger an audible alarm in response to the flow of fire-
suppression fluid through the flow detector.

20 26. The method of claim 15 further comprising providing within the manifold
a check valve which prevents the back flow of fire-suppression fluid from the sprinkler
system to the supply of the fire-suppression fluid.

25 27. A method for retrofitting an existing building with a fire suppression
sprinkler system, said building having a room to be protected and said room having a
hollow wall, said method comprising the steps of:

- (a) operatively connecting a manifold to a supply of fire suppression fluid at a
manifold location, said manifold having an outlet;
- (b) mounting a sprinkler head at a sprinkler head location on said hollow wall;
- (c) providing an unobstructed path between said manifold location and said
sprinkler head location, said path not being visible from within said room;

(d) running a flexible conduit along said path and snaking said conduit along at least a portion of said path;

- (e) operatively connecting an end of said conduit to said manifold outlet; and
- (f) operatively connecting another end of said conduit to said sprinkler head.

5

28. The method of claim 27 wherein holes are made in obstructions between said manifold location and said sprinkler head location to provide said unobstructed path.

10 29. The method of claim 27 wherein said sprinkler head is removably mounted to said hollow wall.

30. The method of claim 27 wherein said conduit is removably connected to said sprinkler head.

15 31. The method of claim 27 wherein substantially the entire length of said conduit is flexible.

32. The method of claim 27 wherein said conduit is kink resistant.

20 33. The method of claim 27 wherein mounting the sprinkler head further includes:

providing a housing defining an internal volume and having an open face and an aperture;

positioning an end of the flexible conduit through the aperture in the housing;

25 attaching the sprinkler head to the end of the flexible conduit and placing the sprinkler head within the internal volume of the housing;

providing a cover having an opening over the open face of the housing, the sprinkler head extending through the opening.

30 34. The method of claim 33 further comprising:

connecting elbow joint between the sprinkler head and flexible conduit; and

attaching the elbow joint to the housing.

35. The method of claim 33 further comprising:
providing a recess within the hollow wall; and
5 positioning the housing within the recess such that the cover is substantially flush with the wall.

36. The method of claim 27 further comprising forming the flexible conduit from a heat-resistant material.

10

37. The method of claim 27 further comprising forming the flexible conduit from a smoke-resistant material.

15

38. The method of claim 27 further comprising providing within the manifold a flow detector configured to trigger an audible alarm in response to the flow of fire-suppression fluid through the flow detector.

20

39. The method of claim 27 further comprising providing within the manifold a check valve which prevents the back flow of fire-suppression fluid from the sprinkler system to the supply of the fire-suppression fluid.

25

40. An attachment device for supporting a sprinkler head connected to conduit, which supplies fire suppression fluid to the sprinkler head, the attachment device comprising:

a housing defining an internal volume within which the sprinkler head is received, the housing having an open face and an aperture through which the conduit extends to operatively connect to the sprinkler head; and

a removable cover which covers the open face of the housing, the cover having an opening sized and configured to receive the sprinkler head.

30

41. The attachment device further comprising an elbow joint connected between the sprinkler head and flexible conduit, the elbow joint attached to the housing.

42. A method for supporting a sprinkler head within a wall, the sprinkler head of the type connected to conduit, which supplies fire suppression fluid to the sprinkler head, the method comprising:

providing a housing defining an internal volume, the housing having an aperture through which the conduit extends to operatively connect to the sprinkler head and an open face;

10 attaching the housing to a rigid support member on the wall;

attaching the conduit to the sprinkler head;

securing the sprinkler head within the housing; and.

positioning a removable cover over the open face of the housing, the cover having an opening sized and configured to receive the sprinkler head.

15

43. The method of claim 42 further comprising:

connecting an elbow joint between the sprinkler head and flexible conduit; and attaching the elbow joint to the housing.

20

44. A fire suppression sprinkler system for protecting a room having a hollow wall, said system comprising:

a manifold operatively connected to a source of fire suppression fluid, said manifold having an inlet and an outlet, said manifold including:

an enclosure;

25 a conduit system disposed within the enclosure and extending between the inlet and outlet;

a flow detector disposed within the conduit system, the flow detector configured to trigger an audible alarm in response to the flow of fire-suppression fluid through the flow detector;

a check valve disposed within the conduit system, the check valve configured to prevent the back flow of fire-suppression fluid from the sprinkler system to the supply of the fire-suppression fluid;

a sprinkler head mounted on said hollow wall;

5 a flexible conduit operatively connecting said sprinkler head to said manifold outlet, said conduit running through an unobstructed path from said manifold to said sprinkler head, a portion of said path being within said hollow wall.